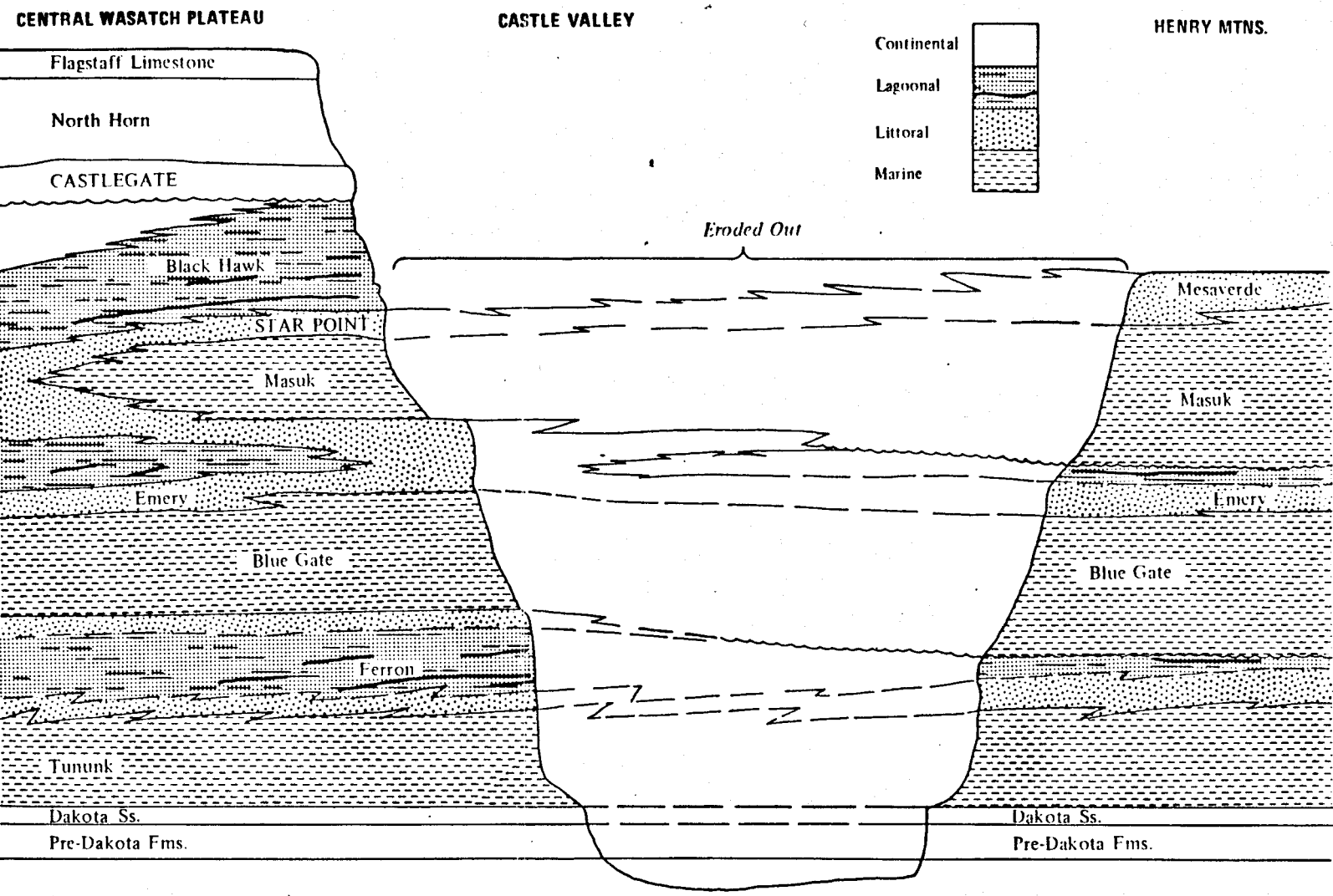
Appendix 6-B

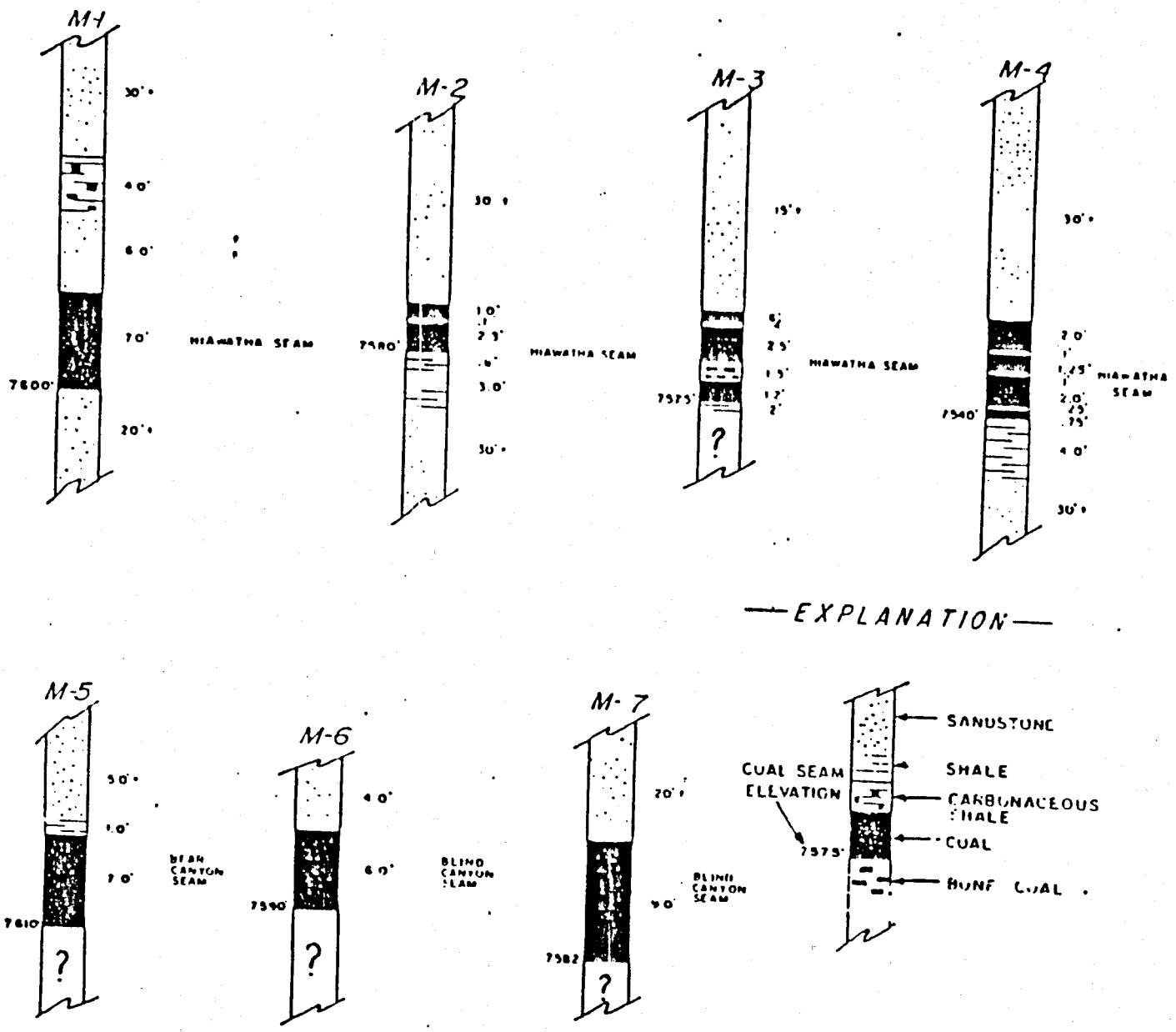
Columnar Outcrop Sections

Figure 6B-1 Stratigraphic Correlation Diagram from Central Wasatch Plateau to the Henry Mountains



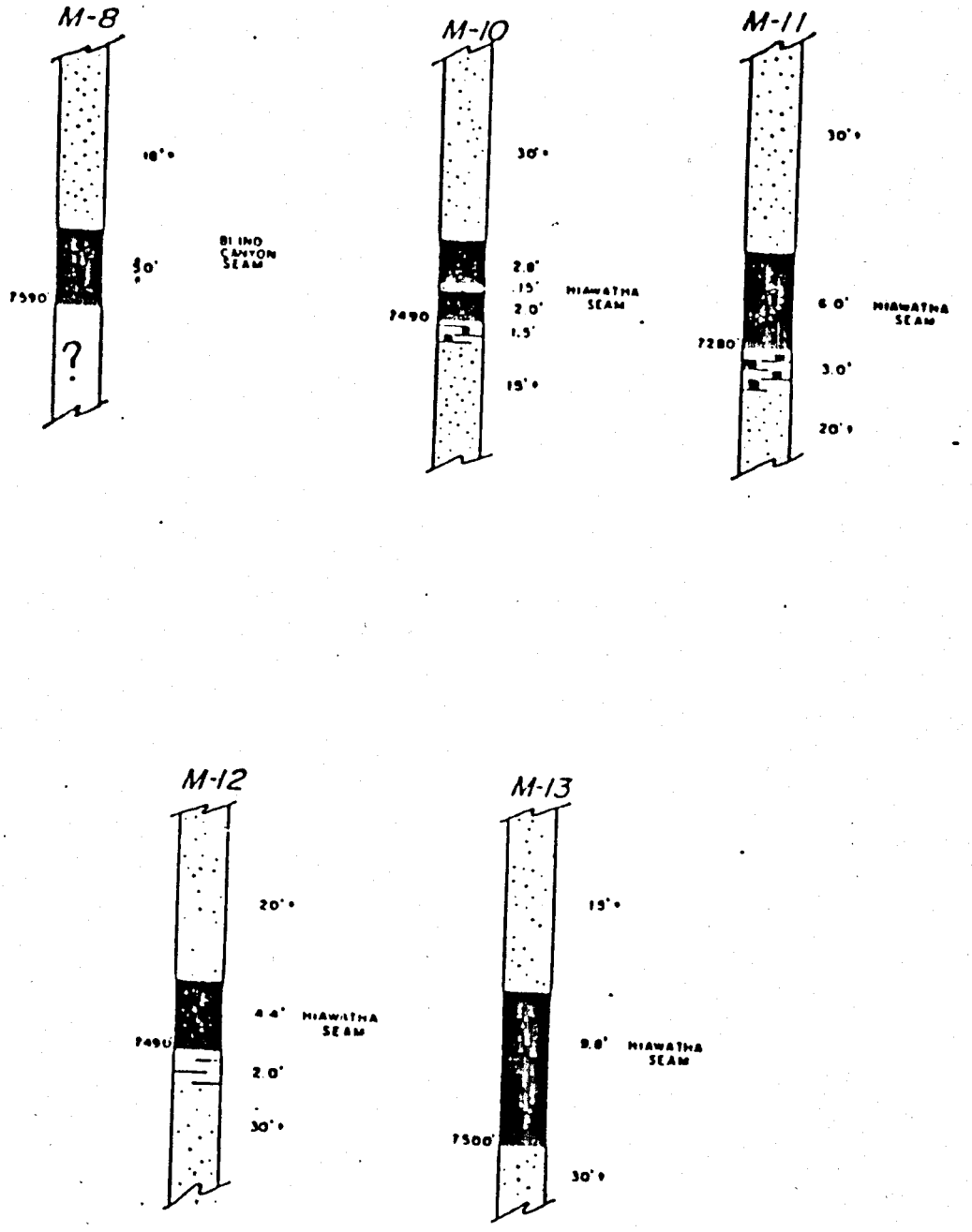
Reference: Doelling, 1972.

Figure 6B-2 Columnar Outcrop Sections, Lower Huntington Canyon, Emery County, Utah



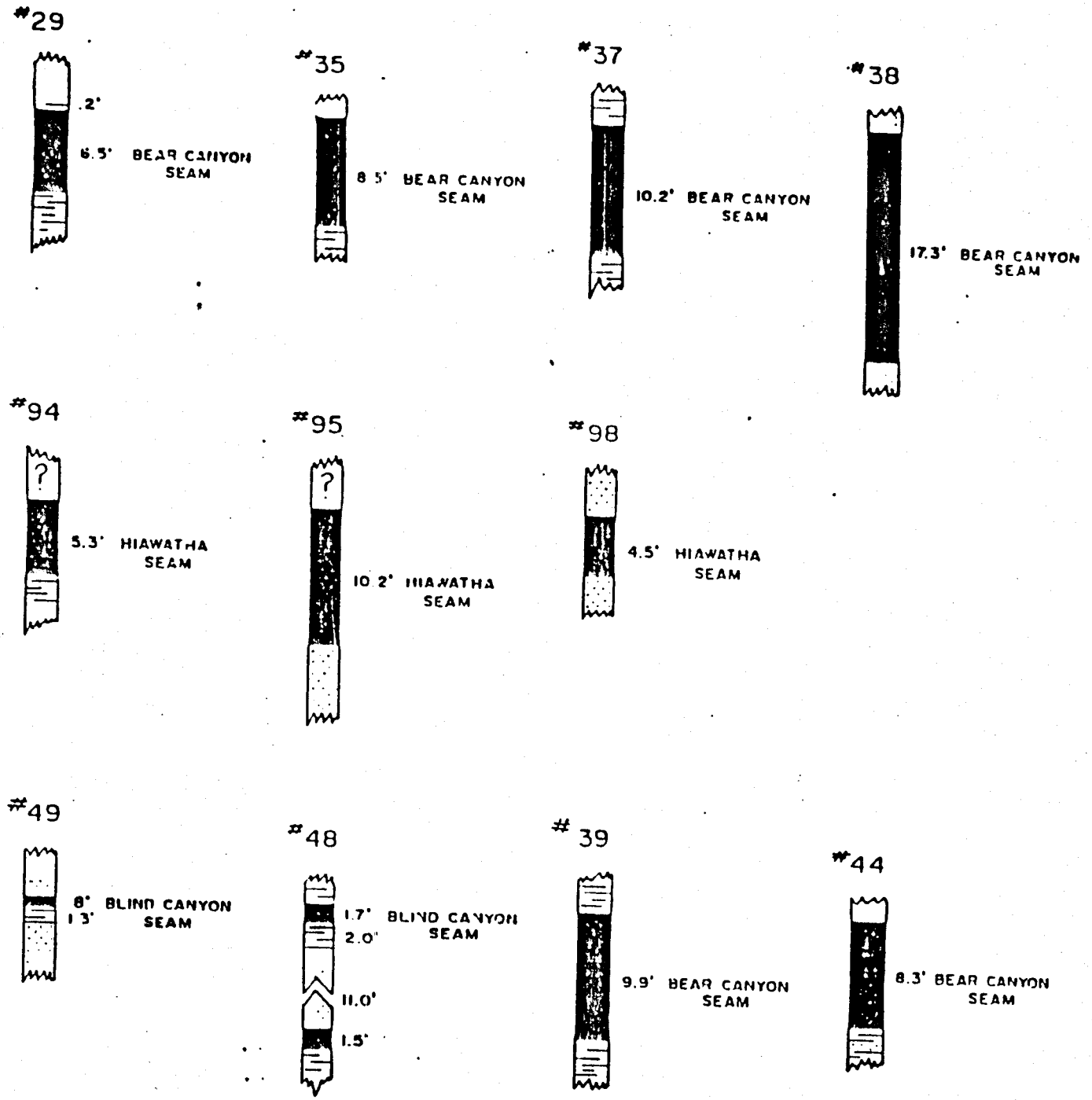
Reference: Sanders Exploration, LTD., Coal Resource Evaluation, Bear Creek Canyon Area, June, 1980.

Figure 6B-2 Columnar Outcrop Sections, Lower Huntington Canyon, Emery County, Utah (cont)



Reference: Sanders Exploration, Limited., Coal Resource Evaluation, Bear Creek Canyon Area, June, 1980.

Figure 6B-2 Columnar Outcrop Sections, Lower Huntington Canyon, Emery County, Utah (cont)



Reference: Adapted from Doelling, 1972.

Figure 6B-3 Description of Blackhawk Formation

Blackhawk Formation

The Blackhawk in the Mesaverde Group of the Wasatch Plateau contains important coal seams in the lower half of the formation. The 700- to 1,000-foot unit, less resistant than the units that contain it, consists of alternating slope- and cliff-forming units (figure 6). The cliff-forming sandstones are generally yellow-gray or white-gray on fresh surfaces and weather to shades of tan, yellow or brown. In places they are reddened by the natural burning of nearby coal seams. Sands are fine- to medium-grained and cemented by either calcite or silica. In a few places they are argillaceous. Iron colors the cement. Occasionally the iron has been leached by organic acids from covering swamps and the sandstone is white.

Slopes of the formation are made of various types of shale and coal. The shales, continental in origin, consist of three kinds: clay shale- soft, granular, gray to green in color and the most common; carbonaceous shale in various shades of brown and black; and smoke gray shale usually associated with the coal.

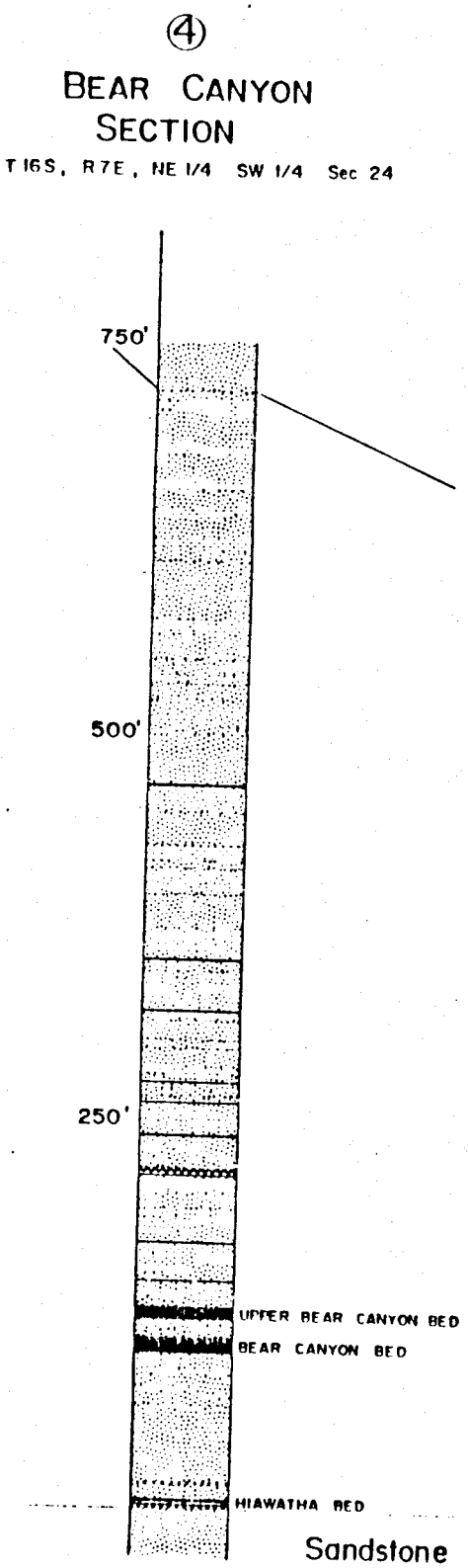
Other strata include friable shaley sandstones, usually thin and platy, that are cemented loosely by calcium carbonate. In some places the rock grades into an impure limestone.

The proportion of shale to sandstone is greater in the north part of the field as compared to the south, but total change in character of the formation is slight. In a section measured by Spicker (1931, p. 30-33) the unit consists of one-third shale and two-thirds sandstone. Key beds are local in extent and each area has its own grouping. An exception is the Aberdeen Sandstone Member. It underlies the Castlegate "A" coal bed and can be traced from the Gordon Creek area southward to Gentry Ridge near Wattis.

The lower contact of the Blackhawk was defined by Spicker (1931, p. 35) as "the clear-cut upper surface of the Star Point Sandstone," but Young (1955, p. 183) redefined the base as the bottom of the Spring Canyon Tongue. Young's work concentrated on the Book Cliffs coal field to the east, but his reports add to the understanding of the Blackhawk in the Wasatch Plateau field. Excerpts from his report follow:

> The redefined Blackhawk formation consists of some prominent littoral marine sandstone tongues and many lesser ones, all projecting eastward into the Mancos, where they lose their identity by grading into shale. Above each of them and below the next succeeding littoral marine sandstone, lagoonal deposits of sandstone, shale and coal were developed behind barrier bars, and where these deposits occur the underlying sandstone is almost everywhere white-capped. . . Division (of six members) is possible only where the basal littoral marine sandstones are developed at the extreme western end of the Book Cliffs at Storrs, Utah (simultaneously the northern end of the Wasatch Plateau field); only the basal sandstones of the Spring Canyon and Aberdeen members are present and between them is about 60 feet of coal-bearing rocks of the Spring Canyon Member. Above the basal sandstone of the Aberdeen Member are about 800 feet of undifferentiated coal measures of the Blackhawk, which are largely lagoonal but may include some inland floodplain deposits in the upper portion.

The commercial coal beds lie in the lower 250 to 350 feet of the formation; some thin units are in the upper part. Two of the more important coal beds are the Hiawatha and Castlegate "A" bed.



Reference: Adapted from Doelling, 1972.